

CLAIMS

1. A method for mitigating the effect of interference between a first base station and a second base station, said first base station and second base stations both sharing a same primary synchronization code, the method comprising the steps of:

generating a primary synchronization channel having said primary synchronization code;
rotating said primary synchronization channel in phase according to a phase rotation sequence; and
receiving said primary synchronization channel.

2. The method of claim 1 wherein said phase rotation sequence is pseudorandom.

3. The method of claim 2 wherein said phase rotation sequence includes changing phase once per slot.

4. The method of claim 2 wherein said phase rotation sequence includes changing phase once per frame.

5. The method of claim 3 wherein said phase rotation sequence includes changing phase by integer multiples of $\pi/2$ radians.

6. The method of claim 4 wherein said phase rotation sequence includes changing phase by integer multiples of $\pi/2$ radians.

7. The method of claim 2 further comprising the step of generating a secondary synchronization channel having a secondary synchronization code, said phase rotation sequence being based at least in part on said secondary synchronization code.

8. The method of claim 7 further comprising the step of:

- 2 combining said primary synchronization channel and said secondary synchronization channel to produce a synchronization channel;
- 4 wherein said step of rotating said primary synchronization channel in phase comprises rotating said primary synchronization channel before said
- 6 combining step.

9. The method of claim 7 further comprising the step of:
 - 2 combining said primary synchronization channel and said secondary synchronization channel to produce a synchronization channel;
 - 4 wherein said step of rotating said primary synchronization channel in phase comprises rotating said synchronization channel in phase.

10. The method of claim 7 further comprising the steps of:
 - 2 generating a dedicated channel;
 - 4 combining said primary synchronization channel and said secondary synchronization channel to produce a synchronization channel; and
 - 6 combining said synchronization channel and said dedicated channel to produce a downlink channel;
 - 8 wherein said step of rotating said primary synchronization channel in phase comprises rotating said downlink channel in phase.

11. An apparatus for mitigating the effect of interference between a first base station and a second base station, said first base station and second base stations both sharing a same primary synchronization code, the apparatus comprising:
 - 6 a primary synchronization channel generator for generating a primary synchronization channel having said primary synchronization code;
 - 8 a phase rotator, coupled to said primary synchronization channel generator, for rotating said primary synchronization channel in phase according to a phase rotation sequence; and
 - 10 a receiver for receiving said primary synchronization channel.

12. The apparatus of claim 11 wherein said phase rotation sequence is pseudorandom.

13. The apparatus of claim 12 wherein said phase rotation sequence
2 includes changing phase once per slot.

14. The apparatus of claim 12 wherein said phase rotation sequence
2 includes changing phase once per frame.

15. The apparatus of claim 13 wherein said phase rotation sequence
2 includes changing phase by integer multiples of $\pi/2$ radians.

16. The apparatus of claim 14 wherein said phase rotation sequence
2 includes changing phase by integer multiples of $\pi/2$ radians.

17. The apparatus of claim 12 further comprising a secondary
2 synchronization channel generator for generating a secondary synchronization
channel having a secondary synchronization code, said phase rotation
4 sequence being based at least in part on said secondary synchronization code.

18. The apparatus of claim 17 further comprising:
2 a first combiner for combining said primary synchronization channel and
said secondary synchronization channel to produce a synchronization channel;
4 wherein said phase rotator is coupled between an output of said primary
synchronization channel generator and an input of said first combiner.

19. The apparatus of claim 17 further comprising:
2 a first combiner for combining said primary synchronization channel and
said secondary synchronization channel to produce a synchronization channel;
4 wherein said phase rotator is coupled to an output of said first combiner.

20. The apparatus of claim 17 further comprising:
2 a first combiner for combining said primary synchronization channel and
said secondary synchronization channel to produce a synchronization channel;
4 and

6 a second combiner for combining said synchronization channel and a
dedicated channel to produce a downlink channel;

wherein said phase rotator is coupled to an output of said second
8 combiner.